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*Evequoz, C.;*

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## On crossbar switch and multiple bus interconnection networks with overlapping connectivity

Wilkinson, B.

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### Abstract:

Multiprocessor interconnection networks are proposed which have the characteristic that each **processor** or **memory** module can connect to a **group** of its near neighbor. **groups** include some of the same **processors** or **memories**. These overlapping connectivity networks are attractive especially for a large number of **processors** which cannot be provided with full connectivity but can operate by communication between **processors**. Applications for overlapping connectivity networks include neural computers and dataflow computers. Banerjee's formulas are derived using a probabilistic approach, including when intermediate **processors** are used in the interconnection path. A general cell design is presented which is capable of representing various overlapping connectivity networks.

### Index Terms:

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